

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-20. (Canceled)

21. (New) A method of processing and finishing an inner surface of a bearing having a cylindrical shape, without cutting, which bearing comprises a backing metal, an impregnated and coated layer formed by impregnating and coating a porous sintered layer of a Cu-alloy powder provided on the backing metal with thermosetting resin composition, and a resin layer composition formed on the impregnated and coated layer and composed mainly or entirely of the thermosetting resin, the resin layer being positioned on the innermost side of the bearing, the method comprising:

holding the bearing in a jig to constrain outward deformation of said bearing;

inserting a mandrel having a peripheral surface into a bore of the bearing, said peripheral surface having a roughness of Ry 1.0 μm or less; and

heating the inserted mandrel within the bore of the bearing so as to press the peripheral surface of the mandrel against the resin layer of the bearing by thermal expansion of

the mandrel, whereby the inner surface of the bearing is finished without cutting the resin layer.

22. (New) A method of processing and finishing an inner surface of a bearing having a cylindrical shape, without cutting, which bearing comprises a backing metal, an impregnated and coated layer formed by impregnating and coating a porous sintered layer of a Cu-alloy powder provided on the backing metal with a polytetrafluoroethylene composition, and a resin layer composition formed on the impregnated and coated layer and composed mainly or entirely of the polytetrafluoroethylene, the resin layer being positioned on the innermost side of the bearing, the method comprising:

holding the bearing in a jig to contain outward deformation of said bearing;

heating a tapered mandrel having a peripheral surface to a predetermined temperature so as to expand the mandrel by thermal expansion thereof, said peripheral surface having a roughness of Ry 1.9 μm or less; and

inserting the heated mandrel into a bore of the bearing so as to press the peripheral surface of the mandrel against the resin layer of the bearing, whereby the inner surface of the bearing is finished without cutting the resin layer.

23. (New) A method of processing and finishing an inner surface of a bearing having a cylindrical shape, without cutting, which bearing comprises a backing metal, an impregnated and coated layer formed by impregnating and coating a porous sintered layer of a Cu-alloy powder provided on the backing metal with a polytetrafluoroethylene composition, and a resin layer composition formed on the impregnated and coated layer and composed mainly or entirely of the polytetrafluoroethylene, the resin layer being positioned on the innermost side of the bearing, the method comprising:

holding the bearing in a jig to constrain outward deformation of said bearing;

heating a tapered mandrel having a peripheral surface to a predetermined temperature so as to expand the mandrel by thermal expansion thereof, said peripheral surface having a roughness of Ry 1.0 μm or less;

inserting the heated mandrel into a bore of the bearing so as to press the peripheral surface of the mandrel against the resin layer of the bearing; and

further heating the inserted mandrel within the bore of the bearing so as to press the peripheral surface of the mandrel against the resin layer of the bearing by thermal

expansion of the mandrel, whereby the inner surface of the bearing is finished without cutting the resin layer.

24. (New) A method of processing an inner surface of a bearing according to claim 21, wherein the roughness of the peripheral surface of the mandrel is Ry 0.5 μm or less.

25. (New) A method of processing an inner surface of a bearing according to claim 22, wherein the roughness of the peripheral surface of the mandrel is Ry 0.5 μm or less.

26. (New) A method of processing an inner surface of a bearing according to claim 23, wherein the roughness of the peripheral surface of the mandrel is Ry 0.5 μm or less.